NAME _____ SCORE _____

1. Simplify: $\left(-\frac{3}{8}\right)^2 + \frac{3}{16} + \frac{5}{12}$

a) $\frac{7}{6}$ b) $-\frac{7}{6}$

c) $\frac{6}{7}$ d) $\frac{13}{14}$

2. Evaluate $\frac{b^2 - 4ac}{a + b}$ when $a = -1$, $b = 2$, and $c = -3$.

a) -16 b) -8

c) 16 d) 8

3. Simplify: $7x - [2x - 3(y - x) + 4y]$

a) $12x - 5y$

b) $6x - 3y$

c) $2x - y$

d) $12x - y$

4. Given $f(x) = 4x + 2$ and $g(x) = 10x - 1$, find $f(g(-1))$.

a) 38

b) -42

c) -34

d) 42

5. Solve: $\frac{x}{2} - \frac{7}{9} = \frac{x}{6} - \frac{11}{18}$

a) 2 b) $\frac{1}{2}$

c) 4 d) -2

6. Solve: $4(x + 2) + 3(x - 4) = 5x$

a) -2 b) 13

c) $\frac{1}{3}$ d) 2

7. For one performance of a play, 360 tickets were sold. Reserved seat tickets sold for \$12 each, and general admission tickets sold for \$8 each. Receipts from the sale of the tickets totaled \$3340. Find the number of general admission tickets sold.

a) 245 tickets b) 115 tickets

c) 225 tickets d) 175 tickets

8. An investment advisor deposited \$50,000 into two simple interest accounts. On the tax-free account the annual simple interest rate is 7%, while on the money market fund the annual simple interest rate is 13%. How much should be invested in the money market fund so that the interest earned by each account is the same?

a) \$32,500 b) \$27,500

c) \$22,500 d) \$17,500

9. Simplify: $\dfrac{(x^2y^{-3})^{-1}(x^2y^4)}{(xy^4)^2}$

a) $\dfrac{1}{x^2y}$ b) $\dfrac{x^3}{y^7}$

c) $\dfrac{1}{xy^2}$ d) $\dfrac{x^2}{y}$

10. The width of a rectangle is $(3x - 5)$ ft and the length is $(5x + 2)$ ft. Find the area of the rectangle in terms of the variable x.

a) $(15x^2 + 31x - 10)\text{ ft}^2$

b) $(15x^2 - 19x - 10)\text{ ft}^2$

c) $(15x^2 - 31x - 10)\text{ ft}^2$

d) $(15x^2 - 19x + 10)\text{ ft}^2$

11. Factor: $6x^{2n} + 7x^n - 20$

a) $(3x^n - 4)(2x^n - 5)$

b) $(3x^n + 4)(2x^n + 5)$

c) $(3x^n - 4)(2x^n + 5)$

d) $(3x^n + 4)(2x^n - 5)$

12. Factor: $64a^3 + 9$

a) $(4a + 3)(16a^2 - 12a + 9)$

b) nonfactorable

c) $(4a - 3)(16a^2 + 12a + 9)$

d) $(4a - 3)(16a^2 - 6a + 9)$

13. Factor: $ay - 3ax - 2by + 6bx$

a) $(a + 2b)(y - 3x)$

b) $(a - 2b)(y - 3x)$

c) $(a - 3x)(2y + b)$

d) $(2a - b)(3x - y)$

14. Simplify: $(3x^3 + 8x^2 + 9) + (x + 3)$

a) $3x^2 - x + 3 + \dfrac{1}{x + 3}$

b) $3x - 1 + \dfrac{13}{x + 3}$

c) $3x^2 - x - 3 + \dfrac{19}{x + 3}$

d) $3x^2 - x + 3$

15. Simplify:

$$\frac{45x^2 - 60x}{3x^2 + 11x - 20} \cdot \frac{2x^2 - 15x + 25}{5x^3 - 25x^2}$$

a) $\dfrac{3(3x + 4)}{x(3x - 4)}$

b) $\dfrac{3(2x - 5)}{x(2x + 5)}$

c) $\dfrac{3(2x - 5)}{x(x + 5)}$

d) $\dfrac{3}{x}$

16. Find the missing numerator.

$$\frac{x - 4}{3x + 2} = \frac{?}{6x^2 + 28x + 16}$$

a) $2x^2 + 16$

b) $2x^2 - 32$

c) $2x^2 - 16$

d) $2x^2 - 16x + 32$

17. Solve: $\frac{5}{3x-1} - \frac{2}{3x+1} = \frac{-2}{9x^2-1}$

a) -1 b) $-\frac{3}{7}$

c) $-\frac{5}{9}$ d) 1

18. Rewrite $A = P + Prt$ in terms of P.

a) $P = \frac{A}{rt}$ b) $P = \frac{A}{1-rt}$

c) $P = Art$ d) $P = \frac{A}{1+rt}$

19. Simplify: $\left(x^{1/2}y^{1/3}\right)^2\left(x^{-2}y^4\right)^{1/2}$

a) $x^2y^{1/3}$ b) $y^{8/3}$

c) $x^{3/2}y^{4/3}$ d) $\frac{1}{xy^3}$

20. Write $(3x-1)^{2/3}$ as a radical expression.

a) $\sqrt{(3x-1)^3}$

b) $(3x)^{2/3} - 1$

c) $\sqrt[3]{(3x-1)^2}$

d) $\sqrt[3]{(3x)^2} - 1$

21. Simplify: $-\sqrt{81a^{10}b^{20}}$

a) $-3a^5b^{10}$

b) $-9a^5b^{10}$

c) $-9a^8b^{18}$

d) not a real number

22. Simplify: $\left(6-\sqrt{-8}\right) - \left(4-\sqrt{-32}\right)$

a) $2 - 6i\sqrt{2}$

b) $2 - 2i\sqrt{2}$

c) $10 - 6i\sqrt{2}$

d) $2 + 2i\sqrt{2}$

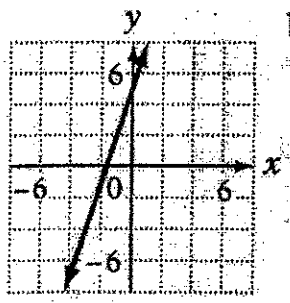
23. Solve: $\sqrt[4]{2x-4} = 2$

a) 10 b) -10

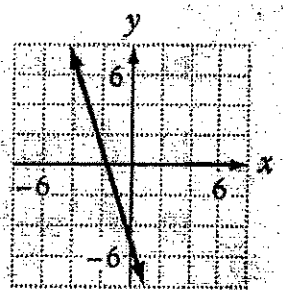
c) 8 d) 4

24. Which is the graph of $y = -3x + 5$?

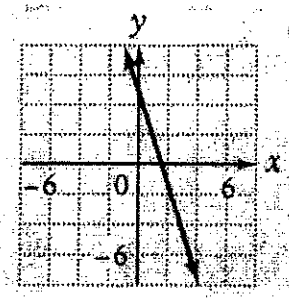
a)



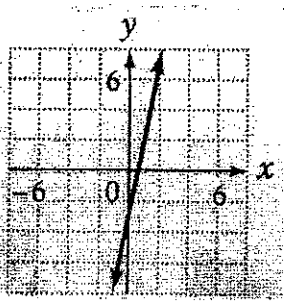
b)



c)



d)



25. Find the slope of the line containing the points $(-4, -3)$ and $(-2, 1)$.

a) -2 b) $-\frac{1}{2}$

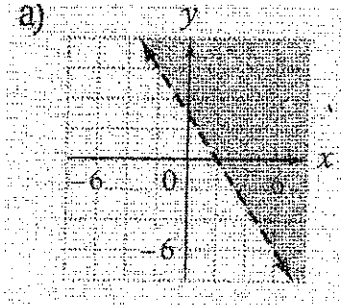
c) $\frac{1}{2}$ d) 2

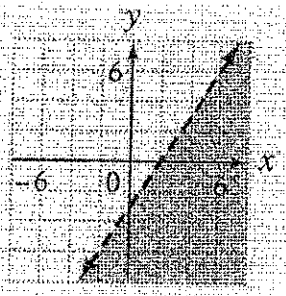
26. Find the equation of the line which contains the point $(-1, 2)$ and has slope $\frac{1}{2}$.

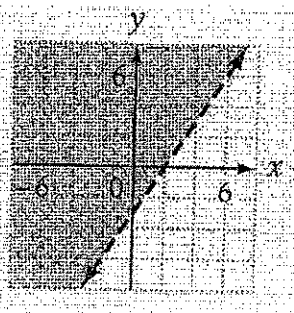
a) $y = -\frac{1}{2}x - \frac{5}{2}$ b) $y = \frac{1}{2}x$

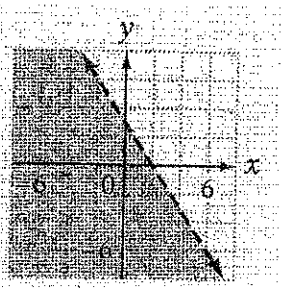
c) $y = \frac{1}{2}x - \frac{3}{2}$ d) $y = \frac{1}{2}x + \frac{5}{2}$

27. Which is the graph of the solution set of $3x - 2y > 6$?

a) 

b) 

c) 

d) 

28. Solve: $x^2 - 6x - 5 = 0$

a) $3 + \sqrt{5}$ and $3 - \sqrt{5}$

b) $-3 + \sqrt{5}$ and $-3 - \sqrt{5}$

c) $3 + \sqrt{14}$ and $3 - \sqrt{14}$

d) $-3 + \sqrt{14}$ and $-3 - \sqrt{14}$

29. Solve: $x^2 - 2x - 3 = 0$

a) $\frac{1}{3}$ and -1

b) 1 and $-\frac{1}{3}$

c) -3 and 1

d) 3 and -1

30. Solve: $3x + 14x^{1/2} = 5$

a) $\frac{1}{9}$ and 25 b) $\frac{1}{9}$

c) 25 d) $\frac{1}{3}$

31. Evaluate the function $f(x) = x^2 - 2x - 5$ at $x = -2$.

a) -3 b) 13

c) 3 d) -13

32. Which of the sets of ordered pairs is a 1–1 function?

a) $\{(-4, -3), (0, 0), (4, 3), (8, 6)\}$

b) $\{(4, 0), (0, 4), (-4, 0), (0, -4)\}$

c) $\{(-1, 2), (0, 1), (1, 2), (2, 3)\}$

d) $\{(3, 0), (-3, 0), (0, 2), (0, -2)\}$

33. Find the inverse of the function $f(x) = \frac{1}{2}x - 2$.

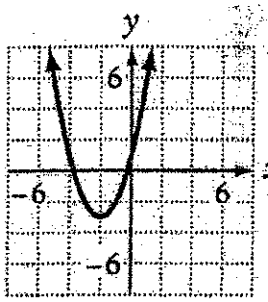
a) $f^{-1}(x) = 4x - 2$

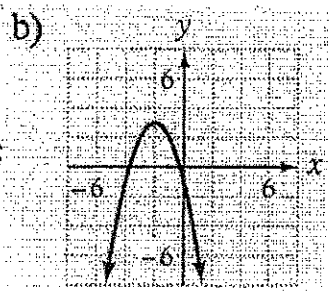
b) $f^{-1}(x) = 2x + 4$

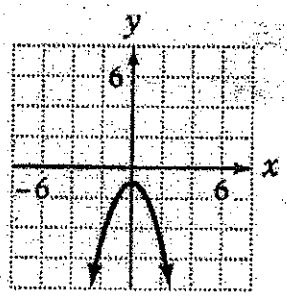
c) $f^{-1}(x) = \frac{1}{2}x - 4$

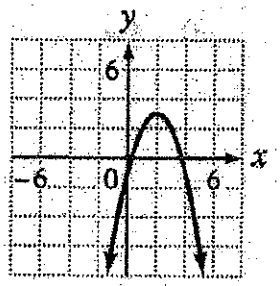
d) $f^{-1}(x) = 2x - 4$

34. Which is the graph of $y = -x^2 - 4x - 1$?

a) 

b) 

c) 

d) 

35. Find the minimum value of the function $f(x) = x^2 - x + 4$.

a) 4 b) 3

c) $\frac{17}{4}$ d) $\frac{15}{4}$

36. Find the equation of the circle with radius 7 and center $(2, -6)$.

a) $(x + 2)^2 + (y + 6)^2 = 49$

b) $(x + 2)^2 + (y - 6)^2 = 49$

c) $(x - 2)^2 + (y + 6)^2 = 49$

d) $(x - 2)^2 + (y - 6)^2 = 49$

37. For $f(x) = x^2 - 9$ and $g(x) = 4 - x$, find $f(1) - g(0)$.

a) 3 b) −1

c) −12 d) 12

38. Solve:
$$\begin{aligned} 2x - 3y &= 1 \\ 3x - 4y &= -2 \end{aligned}$$

a) (2, 2) b) (2, 1)

c) (−10, −7) d) inconsistent

39. Solve: $|3x - 11| < 4$

a) $\varnothing$

b) $\left\{x \mid -5 < x < -\frac{7}{3}\right\}$

c) $\left\{x \mid x < \frac{7}{3} \text{ and } x < 5\right\}$

d) $\left\{x \mid \frac{7}{3} < x < 5\right\}$

40. Simplify: $\dfrac{5}{\sqrt{y} + 2}$

a) $\dfrac{5\sqrt{y} - 2}{y - 4}$ b) $\dfrac{5\sqrt{y} - 10}{y - 4}$

c) $\dfrac{5\sqrt{y} - 10}{y + 4}$ d) $\dfrac{5\sqrt{y} + 10}{y + 4}$

41. Solve:
$$\begin{aligned} 2x^2 + 3y^2 &= 18 \\ x^2 + y^2 &= 9 \end{aligned}$$

a) (3, −3) and $\left(\sqrt{6}, \sqrt{2}\right)$

b) $\left(-\sqrt{6}, -\sqrt{2}\right)$ and (−3, 3)

c) $\left(1, 2\sqrt{2}\right)$ and $\left(-1, -2\sqrt{2}\right)$

d) (3, 0) and (−3, 0)

42. Find $\log_2 8$.

a) 64 b) 16
c) 3 d) 128

43. Solve for x: $\log_4 x = -2$

a) 16 b) $\frac{1}{16}$
c) $\frac{1}{8}$ d) 8

44. Write $2\log_6 x - 3\log_6 y + \log_6 z$ as a single logarithm with a coefficient of 1.

a) $\log_6 \frac{x^2 z}{y^3}$

b) $\log_6 \frac{x^2}{y^3 z}$

c) $\log_6 \left(\frac{x}{yz}\right)^5$

d) $\log_6 \left(\frac{x^2 z^2}{y^3}\right)$

45. Solve for x: $2^{3x+3} = 8^{2x-6}$

a) 3
b) −9
c) −3
d) 7

46. Find the equation of the line containing the points (2, −2) and (1, 3).

a) $y = \frac{5}{3}x + \frac{4}{3}$

b) $y = -\frac{5}{3}x + \frac{14}{3}$

c) $y = -5x + 8$

d) $y = \frac{5}{3}x - \frac{14}{3}$

47. Simplify: $(5x - 2y)^2$

a) $25x^2 - 20xy + 4y^2$
b) $25x^2 + 20xy + 4y^2$
c) $25x^2 - 4y^2$
d) $25x^2 + 4y^2$

48. Solve: $3x - 2 > 6x + 7$

a) $\{x | x < \frac{5}{3}\}$ b) $\{x | x > -3\}$
c) $\{x | x < 3\}$ d) $\{x | x < -3\}$

49. Solve by using the quadratic formula:

$3x^2 = x + 1$

a) $\frac{1 + \sqrt{13}}{6}$ and $\frac{1 - \sqrt{13}}{6}$

b) $\frac{-1 + \sqrt{13}}{6}$ and $\frac{-1 - \sqrt{13}}{6}$

c) $-\frac{1}{6} + \frac{\sqrt{11}}{6}i$ and $-\frac{1}{6} - \frac{\sqrt{11}}{6}i$

d) $\frac{1 + \sqrt{13}}{2}$ and $\frac{1 - \sqrt{13}}{2}$

50. Solve: $x^4 - 5x^2 + 4 = 0$

a) −1, 1, −2, and 2
b) −1, 1, $-2i$, and $2i$
c) $-i$, i, $-2i$, and $2i$
d) −1 and −2

Answers to Practice Test Review
Form H Final

Intermediate Algebra Instructor's Resource Manual/Testing Program 3rd Edition
Aufmann/Barker, Houghton Mifflin Co 1991

1. A
2. B
3. C
4. B
5. B
6. D
7. A
8. D
9. A
10. B
11. C
12. A
13. B
14. D
15. C
16. B
17. A
18. D
19. B
20. C
21. B
22. D
23. A
24. C
25. D
26. D
27. B
28. C
29. D
30. B
31. C
32. A
33. B
34. B
35. D
36. C
37. C
38. C
39. D
40. B
41. D
42. C
43. B
44. A
45. D
46. C
47. A
48. D
49. A
50. A